DCN Update to JET

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DCN Overview

- New Internet2 service transitioning from R&D to production in mid 2009

- Internet2 is involved in gathering community input on the parameters of the service

- This talk is specifically focused on the billing model for Internet2 DCN

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Goal: Keep it Simple

- The DCN pilot service must be simple to deploy and operate from the perspective of connectors, network members, campuses, and researchers.

- Internet2's implementation of the DCN pilot service should be lightweight and not require development of an extensive set of tools or processes that would invest a significant financial commitment in the development of the pilot service.

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Background

Pilot Implementation Phases (1)

- Phase 1: Internet2 Project Managers engage in dialogue with the AOAC and its constructs to obtain a mandate to move forward with the planning and implementation process.
  - This has been completed.
- Phase 2: Internet2 staff engages the community in discussions that will assist in the formation of a project plan. Internet2 makes usage statistics available for members. At the conclusion, Internet2 Project Managers will have a DCN Pilot Service proposal formulated for review.
  - This phase is largely complete.

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Pilot Implementation Phases (2)

- Phase 3: The DCN WG reviews the DCN Pilot Service proposal and provides feedback to the Project Managers. At the conclusion, Internet2 will have a project plan constructed for the NTAC and AOAC to review.
  - This is expected to happen in early 2009
- Phase 4: Internet2 staff begins implementation of the AOAC-approved project plan in close concert with the DCN WG. At the conclusion, the DCN Pilot Service will be available.
  - This phase is expected to conclude in June 2009

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Walkthrough of Pilot Document

Overview

- This is the first draft of a document that will provide a recommendation to the AOAC for implementation approval

- It is expected to be edited heavily over the next month and a half

- It's critical that we get good feedback from the Internet2 Community so we have a solid proposal by mid-March.

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Policy

- Largely mirrors IP network
- Transit between International Networks Enabled
- Transit between Domestic Peers disabled
- Transit between Domestic Peers and International Peers disabled
  - Can request exception

Accounting

- Internet2 will track usage regardless of fee model

- Usage data will be tracked by gigabit hours

- Primary form of authorization with be X. 509 certificates

- Accounting data will be made available to the community in an un-anonymized fashion

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Late Breaking News on Fee Recovery

- Since the original strawman was released, Internet2 has been gathering feedback on fee targets
  - DCN Working Group
  - WG list (see e-mails from Dave Reese, Guy Almes)
  - One-on-one discussions with DCN early adopters
- Initial proposed target of $85/Connector/year
  - Based on an unlimited used model for fee recovery

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Summary of what we've heard

- DCN needs to be positioned
  - Within the E2E model (Guy Almes' note)
  - With a clearer relationship of DCN costs to the entire network portfolio
  - Within the context of hybrid networking
- The landscape has changed since September, 2008
  - The economy is having a significant impact
  - LHC was delayed

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Proposed recommendation to the NTAC and the AOAC

- Internet2 continue with the Pilot process on the original schedule

- Internet2 delay the recovery of a fee until July 2010

- Proposal to the NTAC:

  – "The DCN Working Group recommends that Internet2 continue with the process of implementing the DCN Pilot Program in July 2009, as laid out in the original white paper defining the process in September, 2008. However, in recognition of several shifts in the DCN landscape that have occurred over the past 6 months, the Working Group is recommending a change in that plan: Specifically, that Internet2 not recover fees until July 2010. Furthermore, the Working Group recommends that, in the interim, Internet2 take a more holistic view of the DCN service as it relates to its partnerships with the regionals and campuses, as it fits into the end-to-end model, and as it relates to future hybrid networking paradigms."

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Flat Fee with Unrestricted Usage

- Flat fee for DCN usage equal to IP connection

- No fiduciary constraints to circuit creation

- Unlimited capability to create circuits on network

- Understanding that there will be **community review checkpoints** to discuss introduction of circuit creation constraints

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Operations

- DCN NOC will be housed at Indiana University alongside the Internet2 Network NOC

- DCN Sofware Suite developers will publish roadmaps for protocol changes

- Internet2 NOC will utilize PerfSONAR framework to monitor Internet2 and peer DCN networks

External Connectivity

- Internet2 DCN will maintain existing National-Regional-Campus paradigm
- Peers will be encouraged to peer behind international exchange points
  - Ethernet as common bearer service
  - SONET exploration possible with community input
- Internet2 will work with its partners to assist in the definition of dynamic GOLEs
- DCN peers will be documented by an MOU that clearly describes the allowable uses of the Internet2 DCN fabric

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Now for Questions

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